

Onion Osmosis Inquiry Lab

Knowing that 2 environments (say, a cell and the water surrounding it) at equal concentrations of a solute (say, salt) should have an equal rate of water flow to either side (giving an appearance of no change), ***your objective is to test the advertised nutritional claim that red onions contain .0027% salt.***

For the data collection, you must first observe the cells without any water on them in order to record equilibrium data.

Next you will expose the red onion cells to varying concentrations of saltwater and choose how to best collect data to

You are given a scale, salt & pure water from which you should prepare varying concentrations of salt water solutions.

To make specific % solutions of 100 mL samples (recommended), follow these examples...

A .5% salt solution- weigh 0.5 g salt, add to 50mL pure water in a graduated cylinder. Bring the **total volume up to 100mL by adding more pure water**. Mix to make an even solution.

A .8% salt solution- weigh 0.8 g salt, add to 50mL pure water in a graduated cylinder. Bring the **total volume up to 100mL by adding more pure water**. Mix to make an even solution.

A 1.5% salt solution- weigh 1.5 g salt, add to 50mL pure water in a graduated cylinder. Bring the **total volume up to 100mL by adding more pure water**. Mix to make an even solution.

Pure water alone would represent 0% salt.

Instead of a lab report per person, each person should choose a report component to complete and compile all the sections onto a poster/trifold. **A Chi Square statistical test** is required for this lab so be sure to set up your null hypothesis and results in a way which allows this analysis.

I will demonstrate how to obtain a good onion sample, answer any **2 questions** from the class and then you are on your own to complete the task!

You will receive a performance grade during this lab. Each time your group or any group member needs an additional question answered I will deduct 5 points. If any procedures are done that are illogical or evidence poor science skills, I will deduct 5 points for each infraction. The performance grade is out of **40 points**.